

PORSF
11.3.31.5.1

Childs, John

From: Hermans, Marcel
Sent: Friday, April 27, 2001 3:15 PM
To: Degens, Sebastian; Childs, John; Haynes, Walter (Walt); Cook, Robert; Bloom, Jim; Durst, John; Schmidt, Frank; Degens, Sebastian; Hawkins, Jeff; Quinn, Padraic (Pad); Weiss, David; Eaton, Michael (Mike)
Subject: financial summary of the past dredging project

Just for your information, this is the financial summary of the past dredging project.

Marcel Overview T5-T6
 dredging projec...

USEPA SF



1286336

Summary of the pilot project

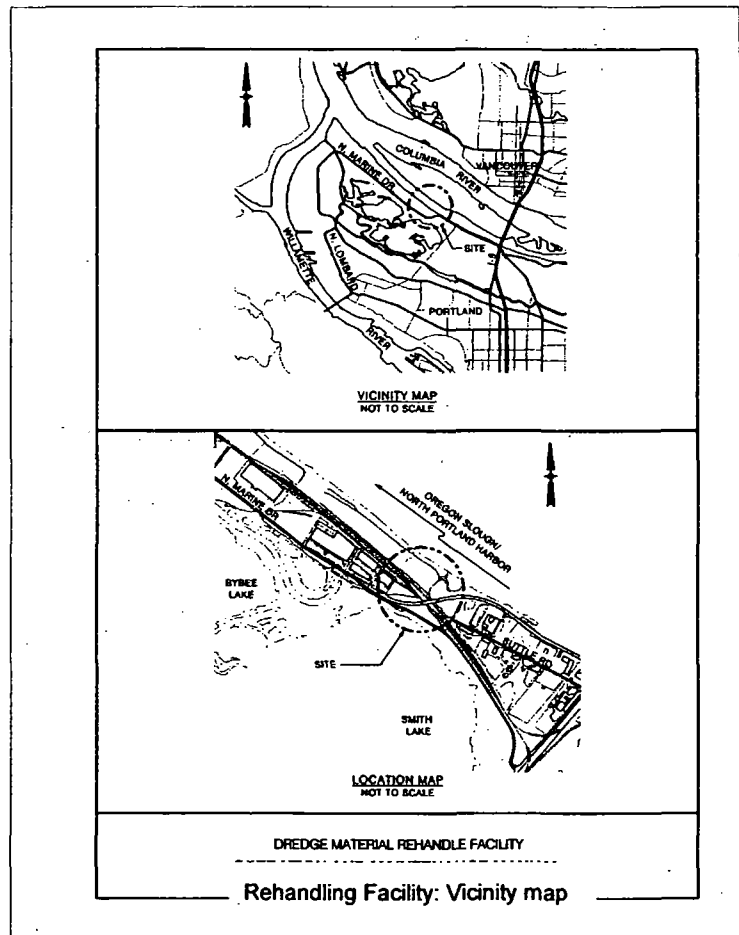
T5 & T6 Maintenance Dredging and Rehandling Facility

Introduction

For the 2000/2001 maintenance dredging work at the Marine terminals, the Port of Portland didn't have the option to dispose of the dredge material in-water. Therefore, a Dredge Material Rehandling Facility was established where dredged material could be dewatered to prepare it for beneficial upland use. The availability of this new facility enabled the Port to keep performing its regular maintenance dredging.

This DMRF introduced a completely new process for dealing with dredged material for the Port of Portland. For this reason the DMRF and the modified dredging process were especially monitored to obtain the experience and information for a thorough post-project evaluation.

An important element of this evaluation process is the financial performance. This document provides the concise financial figures and background information to those. It also includes the estimate of the order of magnitude for the dredging cost that the Port of Portland will face if this process for dealing with dredge material will be used in the future.



Project requirements and considerations

- First Port's terminal maintenance dredging since 1997/1998 season
- No more in-water disposal allowed
- Dredged material had to go upland
- Dredged Material Rehandling Facility has been constructed for this purpose
- Handling process had lots of new elements due to going upland
- Very high environmental scrutiny
- Lots of different permits
- Relatively small amounts of sediments had to be removed (about 7,500 cubic yards)
- Material had some very low levels of DDT and TBT, below screening levels
- T5 was about 1,750 cubic yards, T6 was about 5,500 cubic yards

Financial Data

| | | |
|---|------------|-------------------|
| • Capital investments | | \$ 440,000 |
| • Rehandling Facility Construction | \$ 260,000 | |
| • Equipment purchase | \$ 180,000 | |
| • Maintenance dredging project | | \$ 640,000 |
| • Dredging contract | \$ 150,000 | |
| • Port staff | \$ 150,000 | |
| • Navigation Division (offloading & landside) | \$ 100,000 | |
| • Sampling and testing | \$ 100,000 | |
| • Material removal and final disposal | \$ 70,000 | |
| • Miscellaneous | \$ 70,000 | |

The total dredging costs for this project were roughly \$ 85/yard (without factoring in the capital investment cost). Main reasons for this high unit cost figure were:

1. The need to go upland instead of the usual in-water disposal
2. The pilot character of the new approach
3. The relatively small quantity of dredged material
4. The high environmental cost (testing, permitting, staff time, etc.)

Using this same process for a future dredging project with a yardage in the order of 20,000 cubic yards, would result in a cost of roughly \$ 40 per cubic yard.

Breakdown of Cost for Port staff time

For this particular maintenance dredging project, the charges of \$150,000 for Port staff time can be divided roughly as follows (Navigation Division charges are not included in this item):

| | |
|--|-----|
| Design | 30% |
| Contracting, ABAN | 25% |
| Inspection and contract administration | 20% |
| Environmental support | 15% |
| Project management | 10% |

Generating a basis for Cost Estimating

The total cost figure of the pilot project has been broken down in costs that were clearly related to the pilot character of this particular project, and cost for items that would be part of any regular future project.

Of the \$ 640,000 an estimated \$ 170,000 were directly related to the pilot character and are costs that the Port shouldn't incur again for a future maintenance dredging project.

The other \$ 470,000 was regular project cost that was not related to the fact that this was a pilot project. It has been estimated that about \$ 270,000 of this amount is a fixed cost that is roughly the same regardless of the exact amount of dredge material that needs to be dealt with. (This includes cost for sampling/testing, surveying, contracting, mob/demob of equipment, etc.) The remaining \$ 200,000 is the variable cost attributable to the cost of dredging operations for the volume dredged.

Now that the specific pilot-project costs have been separated off, and the regular cost have been divided between fixed cost and incremental unit cost, it's possible to determine the cost of dredging -assuming the use of the same method- for basically any given amount of dredge material.

The two figures below present this information. **Figure 1** shows the projection for the **project cost** as function of the amount of material to be dredged. **Figure 2** includes the exact same information, but presents the cost as a **cost per cubic yard** as opposed to total cost for the project like in figure 1.

It's important to realize that the information that these both figures are based upon all originates from just 1 particular project. Although good efforts have been made to present the information so that it's as generally applicable as possible, there's still quite some contingency that needs to be taken into account when using this information. One of the limitations is that this information is for dealing with clean sediments only. For dealing with contaminated sediments, different cost factors will apply and cost will be significantly higher.

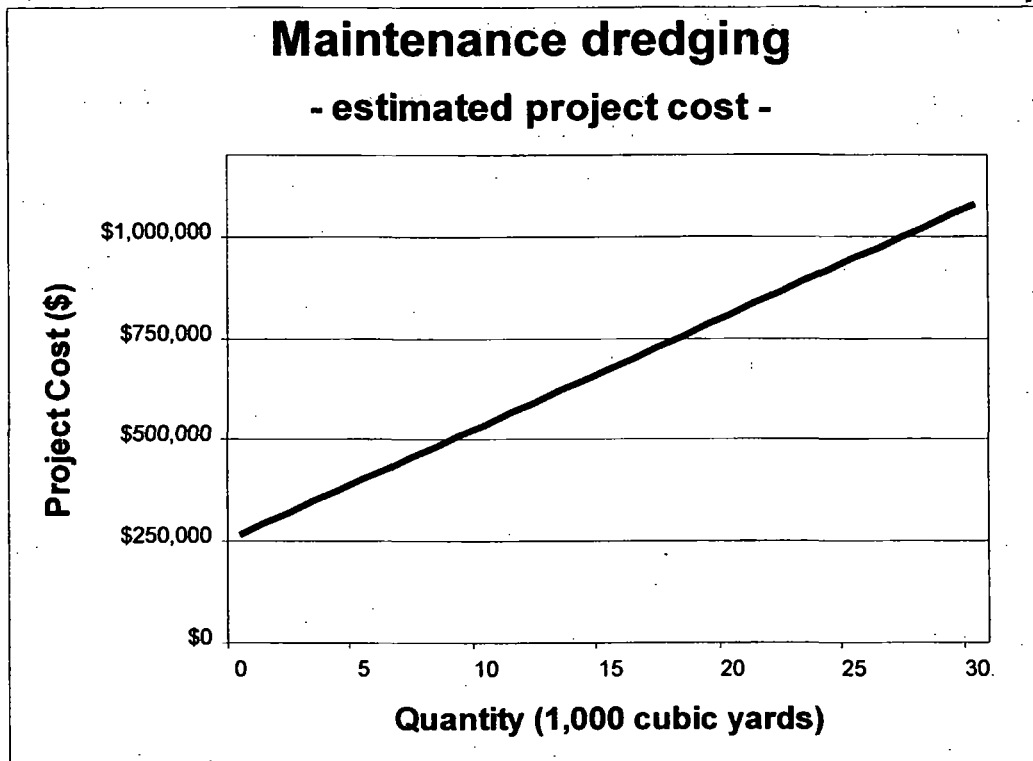


Figure 1: Total project cost (estimated) as a function of dredging amount

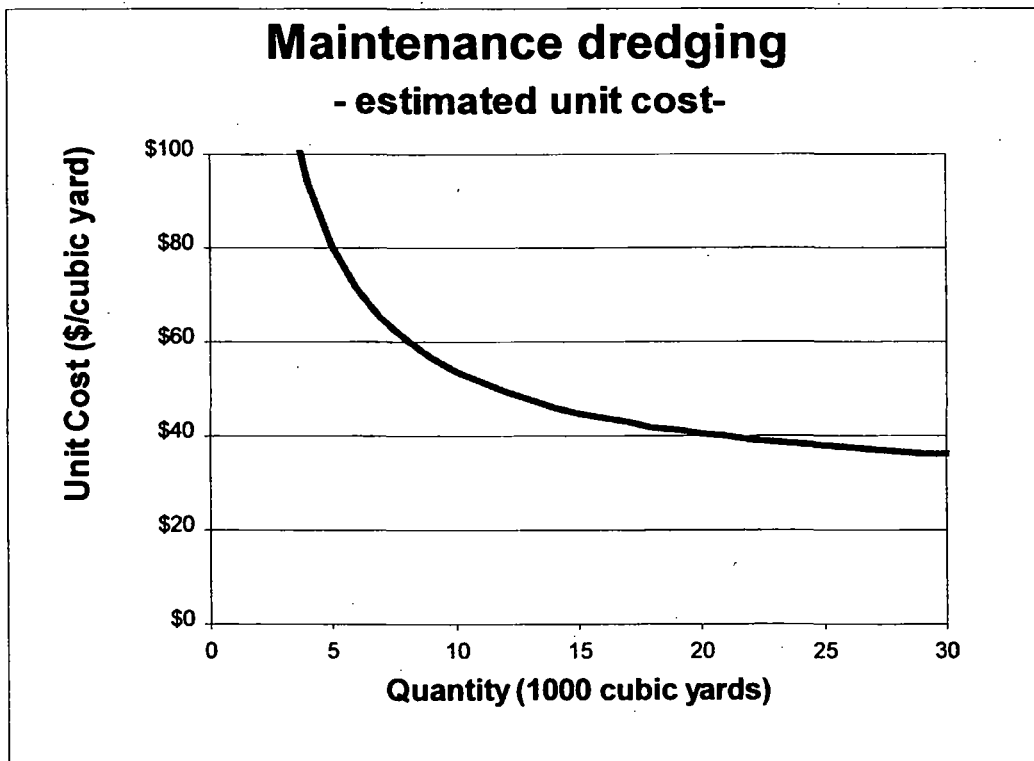


Figure 2: Cost per cubic yard (estimated) as function of the dredging amount